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UNITED STATES DEPARTMENT OF AGRICULTURE
Rural Electrification Administration

P73

Plumbing Specifications for Cold Storage Locker Plants

This Contractor shall furnish all labor and materials to complete all plumbing work shown on the drawings or herein specified, or both as follows.

Work to be done under this contract shall apply equally to all requirements as specified under General Specifications, and shall consist of a complete system necessary for satisfactory operation. Work shall be in accord with all rules and regulations of authorities having jurisdiction.

Material and Workmanship

Material and workmanship shall be the best of their respective kinds. All work shall be executed at such times as may be best for the proper conduct of the entire work and shall be performed in a neat and skillful manner to the entire satisfaction of the Supervising Architect.

Excavation

This contractor shall do all excavating for any underground drainage lines that require excavation under this contract. All excavation shall be backfilled with approved materials. All backfill shall be thoroughly tamped and flooded and left level with the surface of the ground.

Underground Cast Iron Pipe and Fittings

All sewerage inside of building and all branches extending five feet outside of the building, or under roads or driveways, shall be heavy cast iron pipe of not less than the size as will be noted on the plan. The fall shall be not less than 1/4" per foot. All pipe shall be sound, of 5'-0" lengths with bell and spigot ends, made of close-grained gray iron, ductile and readily cut with file or chisel, smooth on the inside, free from flaws, sand holes or other defects and of uniform thickness. All fittings shall be of like material and no turns or changes in direction shall be made more than 45° bonds. Long sweepbonds shall be used where deemed advisable. No changes from the above specifications will be permitted without prior approval.

All joints of the cast iron pipe lines shall be made with molten lead and picked oakum, well caulked, evenly tooled and left smooth on the inside, providing the joints water tight and gas tight.

Cleanouts

Cleanouts in the underground drainage shall be installed at each change of direction. They shall be brass plugs, threaded into brass ferrules caulked into cast iron pipe.

Cleanouts occurring in the soil and waste stacks and branches shall have clean-out plugs full size of stack or branch and installed in such a manner as to be easily accessible.

All cast iron sewage lines and drains shall be run to the side of the building and connected to the main sewer trunk line. Under no conditions are these lines to be run lengthwise of the building under concrete floors or other inaccessible places.

Cleanouts that project through the floor shall have 9" x 9" iron cleanout boxes over them.

Drainage Stacks, Vents, Branches and Fittings

All the stacks of the waste, vent and soil system above the floor shall be of standard cast iron pipe, and fittings shall be installed approximately as shown on the plans. The lower end of the stack shall be caulked into hub of horizontal cast iron pipe under floor. The stacks shall extend through the roof not less than 6 inches. At a point above the highest fixtures, "T" fittings shall be placed in soil pipe to connect the vent stacks.

The vent pipe for the different groups of fixtures shall be of sufficient size to insure a perfect circulation of air and conform to the sizes required by the plumbing ordinance. All branch waste and vent pipes from the fixtures to the stacks are to be of lead. Where vent stack passes through roof, it shall be finished with 4 lb. sheet lead, 24" square, with sleeve extending up and turned into top of pipe.

Floor Drains

Furnish and install floor drains at locations indicated and with a fall of not less than 1" in 10'-0". Floor drains shall be installed prior to the placing of the floor slabs, sub-floor slabs and insulation.

All floor drains requiring traps shall be installed as near the drains as is practical. They shall be located below the level of the finished subgrade prepared for the floor foundation and shall in no case protrude into the concrete foundation or the insulation.

Floor drains to be installed in the showers shall be as manufactured by Blake Specialty Company number L557, or equal with a 4" strainer.

Floor drains in the refrigerated rooms, where gutter type drain is used, shall be as manufactured by the Blake Specialty Company number L860 with an 18" x 5" strainer, or equal.

Floor drains to be installed in areas not specified shall be as manufactured by the Blake Specialty Company number L1090, or equal.

Floor drain to be installed in the holding pen shall be as manufactured by the Blake Specialty Company number L1105, or equal. Size 12" x 12".

Drain to be installed in bleeding trough shall be as manufactured by the Blake Specialty Company number L930, or equal.

Water Supply

To provide adequate water service, a 2" or larger water supply line shall be run from the city water main or pumping system storage tank. Sufficient water shall be supplied in all cases to plumbing fixtures, heating boilers, hot water heaters, faucets, wall hydrants and other equipment indicated. In no case shall branch lines be less than 1/2" in size. Piping shall be erected with due regard to expansion and contraction by installing expansion loops in lines on 40 foot centers. Water lines shall be insulated, where necessary, to prevent moisture condensation.

Hot Water Supply

From the sources of hot water supply where indicated on the plans, or otherwise, run properly sized and valved supply line with branches to supply all fixtures as may be indicated excepting water closets. All hot water lines shall be insulated, where necessary, with approved insulating materials. Method of applying and banding pipe covering shall be thoroughly specified.

Automatic Hot Water Heater and Storage Tank

The hot water heater, either electric or gas, with all automatic controls shall be purchased by the owner, delivered to the plumbing contractor in its original shipping crate and installed by this contractor.

Water Lines and Branches

All cold and hot water lines and branches shall be of standard galvanized steel pipe and malleable fittings. As previously stated, the size of branch lines shall be not less than 1/2". All lines and branches are to be hung with a

graduated fall to permit the entire system to be drained. Screw joint pipe shall be made water-tight, with red lead compound or other approved jointing.

Fixtures

Furnish and install, complete and ready for use, the following fixtures where indicated on plans. Fixtures of other makes will be acceptable when approved by Architect. After the installation of all plumbing fixtures they shall be carefully cleaned and turned over to the owner without damage.

Water Closets

Bowl, vitreous china, siphon jet type, elongated pattern, with concealed jet and top supply inlet. Fittings, flush valve Sloan number star 110FG, or equal, with side inlet, one inch ground joint union angle stop, metal oscillating handle. 1-1/2" straight flush connection, wall and spud flanges with two china bolt caps. Seat, black hard rubber with extended open front, less cover, with black check hinge. N. O. Nelson's plate N2470, or equal.

Lavatories

Nelson's Plate N-1590-20 x 18" White vitreous china lavatory with integral back, open overflow, supported on wall hanger, fitted with combination centerset fitting for hot and cold water, chain and rubber stopper, 3/8" I. P. size supplied to wall with stop valves and 1-1/4" brass "p" trap, or equal.

Showers

Nelson's Plate N-3496 all brass built-in shower with 1/2" compression valves, union couplings, cross handle and escutcheon, bent shower arm and adjustable spray shower head with ball joint, or equal. Chromium curtain rod with wall flanges shall be installed.

Sinks

Scullery type sink to be installed in the meat processing rooms shall be as manufactured by Elkay number LK 8248-24L, or equal. The sink shall be equipped with double sink faucets, waste plugs with stoppers and a grease trap. The sink faucets shall be N. O. Nelson N-4110, or equal. The waste plugs shall be N. O. Nelson N-4162, or equal.

Waste connection to be used shall be as manufactured by Elkay number LK54 or LK55, or equal.

The grease trap shall be Josam number A1, or equal.

Scullery type sink to be installed in the vegetable processing room shall be as manufactured by Elkay number LK 7236-24RL. Overall height of sink shall be 44 inches, depth 10 inches, length shall be 84 inches and the width shall be 26 $\frac{1}{2}$ inches.

The sink shall be equipped with cold water faucet with hose end.

Waste plugs shall be N. O. Nelson N-4162, or equal.

Waste connection to be used shall be as manufactured by Elkay number LK54 or LK55, or equal.

Valves

Wherever supply lines terminate at a valve or fixture, same shall be provided with an air chamber of sufficient size to prevent water hammer. Each hot and cold water riser and all branches therefrom shall be independently controlled by valve shut-off.

All valves shall be of the same name or trade mark, screwed joint construction and designed for 125 pound pressure.

Sillcocks and Hose Bibs

Furnish and install on outside of building and where directed 3/4" loose key anti-freeze hose faucets, equal to American Foundry and Manufacturing Company's type #69.

Hose bibs for hot and cold water shall be installed in the meat processing room, slaughtering room and lard rendering room where indicated on the plans. These double service faucets shall be as manufactured by N. O. Nelson number N-4112, or equal.

Sleeves and Escutcheons

All pipes passing through concrete floors shall be run in heavy galvanized iron sleeves 1/2" larger than outside diameter of pipe passing through them. Where any lines or branches are exposed in finished portions of building they shall be finished at walls, ceilings or floors with approved escutcheons.

Hangers and Supports

All hangers, pipe supports and fixture settings in or against masonry, concrete or stone backing, shall be securely made with expansion bolts or other approved methods, without the use of wood plugs. All drainage and plumbing pipes shall be rigidly secured and supported in order that the proper alignment shall be maintained. Concrete contractor to install hangers where necessary, materials to be furnished by plumbing contractor.

Backgrounds

All backgrounds except under special conditions, must be provided for the securing of closets, tanks, basins, sinks, brackets and all other wall fixtures or hangings. Installation to be made by others.

Vitrified Pipe

All cast iron pipes extending 5 feet from the building shall be connected to a spigot and socket type vitrified clay sewer line that shall be not less than 6" in diameter, having a fall of not less than 1/4" per foot. All vitrified pipe and fittings shall be first quality vitrified clay pipe, sound and well burned throughout its thickness, with well glazed, smooth exterior and interior surfaces, free from cracks, flaws, blisters, fire checks and all other imperfections which would impair the value. All clay pipe joints, unless otherwise specified, shall be formed of Portland Cement mortar and cement soaked oakum gasket, carefully packed to maintain an accurate, smooth flow line, and finished with a full packed mortar joint neatly beveled outside the bells.

Installation Tests

At the completion of the underground work, and before it is covered up, the installation shall be plugged up at all openings and filled throughout with water. The water shall be left in the piping at least 24 hours and any leaks that appear shall be made tight and the system retested until perfect.

All water lines, hot or cold, are to be tested with 100 pound pressure per square inch and any leaks that appear shall be made tight. The system shall then be retested until it is perfect.

Heating

This Contractor shall furnish all labor and materials to complete all of the heating system shown on the drawings as herein specified, or both as follows. Work shall be in accord with all rules and regulations of authorities having jurisdictions.

A high pressure steam boiler or individual gas burners are necessary for processing purposes.

Where such installations are made the most available and economical heating medium shall be employed.

All heating equipment shall conform to all local codes and shall be thoroughly tested before acceptance.

All gas piping and installation shall be thoroughly inspected by the Gas Company and conform to all local codes before acceptance.

Specifications for the heating systems shall be prepared by the Projects' Architect or Engineer and approved by REA prior to the letting of bids.

Provisions for heating will be made by the Architect where necessary. The sample plan does not show space provided for this equipment.

